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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/922,948	08/07/2001	Stefan Wigger	33713W003	9507

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EXAMINER

WILKINS III, HARRY D

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 07/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/922,948

Applicant(s)

WIGGER ET AL.

Examiner

Harry D Wilkins, III

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5 and 7-9 and 11-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5,7-9 and 11-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. The rejections under 35 USC 102 based on the Hirooka et al patent have been withdrawn in view of Applicant's arguments. However, new grounds of rejection under 35 USC 103 have been applied.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 14, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirooka et al (US 5,330,813).

Hirooka et al teach the invention as claimed. Hirooka et al teach carburizing a surface (see col 7, lines 10-12) by first preventing carburization on a portion of the surface by applying a patch of a material containing (col 3, lines 32-34) a particulate material (e.g.-borax, boron oxide, borosilicic acid, phenylboric acid and water glass) and (col 3, lines 53-54) adjuvant materials (e.g.-talc). Hirooka et al contain several examples where the ratio of the particulate material to the adjuvant is 9:1 (see examples 2 and 5), 4.5:1 (example 7) and 13:1 (example 8).

It would have been within the expected skill of a routineer in the art to have selected a substance which forms boron glass (e.g. boron oxide and borax) as the particulate material and to have selected a magnesium-silicon compound (e.g.-talc) as

the adjuvant in order to obtain the best anti-carburizing coating with the best ability to stay in place (the function of the adjuvant).

Regarding claim 15, Hirooka et al teach (see col 7, line 12) that the carburizing occurs at 950°C.

Regarding claim 16, Hirooka et al teach (see col 9, line 42) that the patch also comprises a resin (i.e.-organic binder).

4. Claims 1, 3, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirooka et al (US 5,330,813) in view of Milaniak et al (US 5,366,765).

Hirooka et al teach the invention substantially as claimed. Hirooka et al teach (see col 2, line 34) a patch for preventing carburization that contains (see col 3, lines 32-34) particulate materials such as borax, boron oxide, borosilicic acid, phenylboric acid and water glass and (see col 3, lines 53-54) adjuvant materials such as talc and magnesita. The patch allows for carburization for a portion of the metal surface to be prevented (see col 2, lines 43-44). Hirooka et al contain several examples where the ratio of the particulate material to the adjuvant was 9:1 (see examples 2 and 5), 4.5:1 (example 7) and 13:1 (example 8).

It would have been within the expected skill of a routineer in the art to have selected a substance which forms boron glass (e.g. boron oxide and borax) as the particulate material and to have selected a magnesium-silicon compound (e.g.-talc) as the adjuvant in order to obtain the best anti-carburizing coating with the best ability to stay in place (the function of the adjuvant).

However, Hirooka et al do not teach that the composition was applied as a paste, semi-liquid or liquid.

Milaniak et al teach several methods of applying a composition of a powder mixed with a binder onto a metal surface. In particular, the invention of Milaniak et al is directed to (see abstract) a method of applying a coating by application of a slurry (i.e.-a semi-liquid). Milaniak et al is considered to be analogous art because it is related to the problems addressed by the present invention, particularly the application of a powder material onto a metal surface.

The "patch" of Hirooka et al and the slurry of Milaniak et al are considered to be functional equivalents. The reason that they are considered equivalent is that they both perform the same function of providing a method of coating a metal surface with a powder easily. See MPEP 2144.06. No motivation is needed for the substitution of functional equivalents.

Regarding claim 3, Hirooka et al teach an example that uses a particulate/adjuvant ratio of 9:1 (examples 2 and 5) and an example that uses 13:1 (example 8), which ratios are within the presently claimed ratio.

Regarding claim 5, Hirooka et al do teach examples (2 and 5) that have a particulate/adjuvant ratio of 9:1. This ratio is close enough to the presently claimed ratio that one of ordinary skill in the art would have expected it to have the same properties as claimed. See MPEP 2144.05.

Regarding claim 7, as above, Hirooka et al teach using talc as the adjuvant.

Regarding claim 8, Hirooka et al teach using talc (composition $\text{Mg}_3\text{Si}_4\text{O}_{10}(\text{OH})_2$, see "The Mineral Talc"). The compositions and structure of talc and magnesium trisilicate are close enough that one of ordinary skill in the art would have considered them to be functional equivalents. See MPEP 2144.06. No motivation is needed for the substitution of functional equivalents.

Regarding claim 9, Hirooka et al teach (see col 3, lines 32-34) that the particulate included materials such as boric oxide and borax. It would have been within the expected skill of a routineer in the art to have opted to use either of these particulates in order to obtain the best anti-carburizing coating.

Regarding claims 11, 12 and 13, Hirooka et al teach (see col 4, lines 23-28) that the preferred composition contains 40-70 wt% particulate (anti-carburizing compound), such as boron oxide (col 3, lines 32-34) and 60-30 wt% binder resin, and a ratio of anti-carburizing compound to adjuvant of about 9:1. The presently claimed composition is within the broad range disclosed by Hirooka et al. However, it would have been within the expected skill of a routineer in the art to have optimized the composition of the three components within the claimed range in order to best create a coating that prevents carburizing and remains in place during heating (see col 2, lines 44-51).

Response to Arguments

5. Applicant's arguments with respect to claims 1, 3, 5, 7-9 and 11-16 have been considered but are moot in view of the new ground(s) of rejection.

6. The Examiner would like to rebut one argument, in that the purported superior qualities of the present invention have not compared the present invention with the

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closest prior art. The only comparisons provided are for compositions that lack an "adjuvant" (as defined by Hirooka et al). The closest prior art is Hirooka et al, which teaches the combination of the boron glass forming compound with an adjuvant that helps to keep the boron glass in place after melting. Applicant should demonstrate that using a magnesium-silicon compound (e.g.-talc) provides better results than those of the other adjuvants disclosed by Hirooka et al.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D Wilkins, III whose telephone number is 703-305-9927. The examiner can normally be reached on M-Th 10:00am-8:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V King can be reached on 703-308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Harry D Wilkins, III
Examiner
Art Unit 1742

hdw
July 7, 2003

ROY KING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700